Vittorio Paolone
University of Pittsburgh
April 19, 2003

Selection Criteria for Special Events

Global Criteria for Secondary Vertex:

1) No limit on number of charged tracks produced at secondary vertex
2) Both long and short decays allowed.
   - i) Long Decays: At least two micro-tracks (one micro-track: one layer of emulsion plate) of parent track observed.
     a) Minimum Kink Angle $> 3 \times \sigma_{measured}$ (Typical $\sigma_{measured}$ ~1.7milliradians)
     b) Impact parameter of daughter track with respect to primary vertex > 5μm.
     c) Daughter track consists of at least three micro-tracks
   - ii) Short decays: Parent track not observed in emulsion (≤ one micro-track).
     a) Daughter track started one or two emulsion layers downstream of located primary vertex
     b) Daughter track consists of at least three micro-tracks
     c) Impact parameter of daughter track with respect to primary vertex > 5μm.

Criteria for Charm Decays:

1) Global criteria must be meet
2) Either one or three charged tracks produced at secondary vertex
3) At least one track from primary vertex identified as an electron or muon
4) For long decays:
   - i) Impact parameter of daughter track with respect to primary vertex < 1mm for kinks or average impact parameter of tracks from tridents < 1mm
   - ii) Decay length ≤ 10mm
   - iii) Estimated P_T of decay ≥ 250 MeV/c
5) For short decays:
   - i) Estimated P_T(min) of decay ≥ 100 MeV/c

Criteria for Tau Decays:

1) Global criteria must be meet
2) Either one or three charged tracks produced at secondary vertex
3) No track from primary vertex identified as an electron or muon
4) If decay produced three tracks none identified as electron or muon
5) For long decays:

    i) Impact parameter of daughter track with respect to primary vertex < 500μm for kinks or average impact parameter of tracks from tridents < 500μm
    ii) Decay length ≤ 10mm
    iii) Estimated P_T of decay ≥ 250 MeV/c

5) For short decays:

    i) Estimated P_T(min) of decay ≥ 100 MeV/c

Criteria for Secondary Vertices:

1) Global criteria must be meet
2) Vertex not identified as either charm or tau decay